Engineers of the Future

U. S. Department of Energy
Office of Industrial Technologies

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Comparison

Mechanical Engineer

- = 156 Credits to Graduate

2000 = 128 Credits to Graduate

Conclusions:

Δ 31 Years 28 Less Credits (18%)

Knowledge 2x or 3 x

The Obvious

1969 **Big Company Loyalty**
- Guaranteed Employment
- Known Career Path
- Stable, Predictable
- "Rake the Gold"

2001 **Uncertainties – Layoffs**
- Challenges – Crisis Management
- Computers, Net, Etc.
- Problem Solving
- Yet…Full Employment Environment

20XX **? ? ? ? ? ? ? ? ? ? ? ? ?**

Good News

- Technical Skills are in Demand
- High Skills Translate into Good Jobs
- Technology Careers are Exciting & Diverse

Current Assessment

Shareholder Return:

- Over the last 10 years, 8 of the 25 worst performing companies were in the metals and mining industry; over the last 5 years it was 7 of 25

- Out of 94 industries, aluminum ranked 55th in returns to shareholders; steel was 93rd and precious metals were dead last

- The best metals companies have been able to come close to average corporate performance

20XX??????

Drivers (Examples)

- International Competition/talent
- US maturity
- Dismal Perception of Career Prospects
- Retirements + Career Shortages
- Technical vs. Management
- Geographical

20XX??????

Vision (Elements)

- Benefit to employee
- Retention, Job Satisfaction
- Dramatic Changes
- ➢ Pay for Skills
- Commitment to Excellence
- Educational Alliances
- Career Development
- Outsourcing Opportunities
- Succession, Leadership
- Involvement/Performance Correlation

Pay For Skills

- Reward Employees Who Increase Skills
- Pay for “Acquired Skills”
- Promote Cross Training
- Pay for Trainers

ISS – "Forging the Future"

Recognition

-- Steel Industry needs to attract next generation of steel professionals

Approach

-- Improve The Image
-- Attracting new Talent
-- Developing young professionals

Elements

-- Ferrous Metallurgy Grant Program
-- Speakers Bureau
-- Steel Scholarship
-- Student Recruitment
-- Young Leaders Program
-- Networking Forums

SMA – DOE Student Fellowship

Need . . . . . (12 – 15 Students Per Year)

Elements

-- First Year Technical Student (Early Action)

-- "Mentor" -- A Must

-- "Champion" -- A Must

-- Project Reports

-- Additional Recognition

-- Supplements Company Programs

Conclusion & Questions

- Any Simple Answers?
- Is the recognition of our Challenges of the Future a National, Local, Industry, Company Priority for long term growth?
- Are we willing to work with the educators?
- The final answer is . . . . . .